Stephenson on the reorganization: see pages 4, 5

MARSHALL STAR

Marshall Space Flight Center — May 6, 1999

"We bring people to space — We bring space to people"

Marshall technology

Improved video quality to aid law enforcement

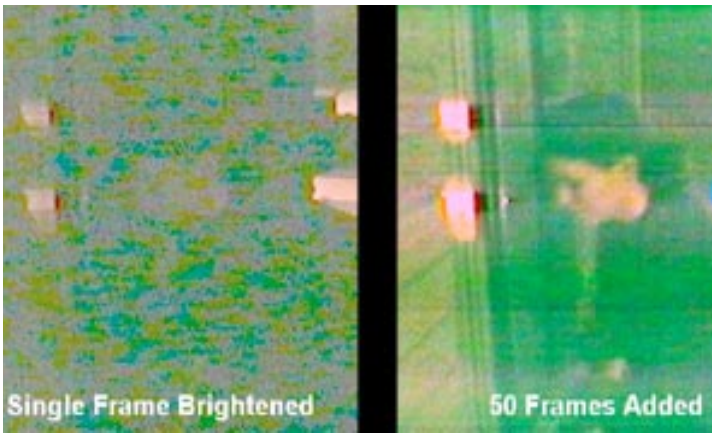
By Tracy McMahan

Watch out, America's most wanted. NASA scientists have invented promising, new software technology to help law enforcement agencies catch criminals by improving the analysis of crime scene video.

Technology developed at Marshall already has been used to help the FBI improve video of the bombing at the 1996 Olympic Games in Atlanta. NASA software clarified dark, nighttime videotape made with a handheld camcorder, revealing important details that had been obscured.

The technology also may be useful for medical imaging, scientific applications and home video. A provisional patent has been filed, and the technology will soon be available for licensing.

"This product has so many applications that will benefit the public — from very technical to those almost anybody can use," said Paul Meyer, one of the technology's inventors at Marshall.



File photo

In the original image, at left, it is not possible to see a person. After video image stabilization and registration is used to improve the video image, right, it is easy to identify a person.

Imagine a dark crime scene captured on videotape by a security system. The Video Image Stabilization and Registration (VISAR) software will eliminate flaws in the video, remove blurs and stabilize images. With the NASA video stabilization system,

*See **Video** on page 3*

The sky is not the limit for Marshall's 'rocket girls'

by Kelly McFalls

Millions of people are reading the No. 1 best-seller and flocking to theaters to see "October Sky."

Based on the book originally entitled "Rocket Boys" by former Marshall rocket scientist Homer Hickam, "October Sky" chronicles Hickam's childhood and his fascination with rocketry and the early space program.

But what about the "rocket girls?"

"When our pioneer ancestors opened up the American frontier, it took both women and men to do it. The same is true today for the new frontier of space," said Hickam, who retired from Marshall in February 1998.

Case in point: Even though she refers to herself as "just one of the guys," Project Manager Sherry Buschmann is one of the many women at Marshall building a highway to space.

Buschmann's work in the Advanced Space Transportation Program at Marshall parallels her pointed creed: "If you're not walking on the edge, you're taking up too much space."

She and her team, which includes members from seven NASA centers, are partnering with industry to develop and demonstrate cutting-edge technologies, innovative launch systems and simplified operations to dramatically reduce the cost of access to space.

"If we can get launch costs down, the possibilities for space exploration and commercialization would be endless. I believe we can answer that challenge here at Marshall," said Buschmann.

Affordably launching a vehicle to low-Earth orbit is only one of the challenges tackled by women engineers at Marshall. Leslie Curtis, project manager for space transportation technologies, is leading development of new space transfer technologies to make exploration of our universe more affordable and faster.

"Once a spacecraft gets to low-Earth orbit — whether it's traveling to a comet, the Moon or another planet — it will need some sort of transportation system other that the one that got it there," said Curtis.

*See **Rocket Girls** on page 2*

"Safety Begins with Me "
— Safety slogan submitted by
Jimmy Cobb, CR90

Rocket Girls

Continued from page 1

One of the in-space transportation technologies Curtis' team is developing is an electrodynamic tether that will use the Earth's magnetic field to generate thrust.

"If we don't have to carry everything we need for in-space transportation, instead using what is already available in space, we can lower the weight lifted into orbit," said Curtis. "If we can lower the weight, we lower the launch costs."

Another woman paving the way for future space transportation is Susan Turner, project manager for X-37.

The X-37 would be the first flight demonstrator for Future X — a representation of NASA's new, innovative business strategy to dramatically reduce the cost of space transportation. For the first time, NASA would be able to readily test and validate new, state-of-the-art space transportation technologies in flight.

"This project is about taking experimental, ground-tested technology to the next level: flight testing," said Turner. "Once the technology is proven, industry can take what we've learned and apply it to the spacecraft of the future."

The X-37, pending completion of ongoing negotiations, would be built by The Boeing Co. in Seal Beach, Calif. It would be the first experimental vehicle to fly in both orbital and reentry environments to test technologies in these harsh environments. It is planned to demonstrate 36 advanced airframe, propulsion and operations technologies that can support various spacecraft designs.

A major focus of the vehicle is to improve today's fragile and expensive-to-maintain spacecraft thermal protections systems. Knowledge and on-orbit experience gained through flight demonstrations could result in more robust thermal protection systems — technology development that could be a significant factor in reducing space transportation costs.

File photo

Marshall's 'rocket girls' are, clockwise from top, Turner; Ann Whitaker, director of the Materials and Processes Laboratory; Wendy Cruit of the Propulsions Systems Division; Curtis; and Buschmann.

Today at Marshall the "rocket girls" join the "rocket boys" in getting the United States into space. "It will require all of us working together to explore, develop and settle the solar system," said Hickam. "I am convinced that women will continue to play a vital and leading role in this great enterprise. That's why I dedicated my latest book, 'Back to the Moon,' to the women and men of NASA."

The writer, a contractor employed by ASRI, supports the Media Relations Office.

Photo by Doug Stoffer

Certificate of Recognition

John Hengel, an aerospace engineer with the Experimental Fluid Dynamics Branch of the Structures and Dynamics Laboratory, at left, receives a Certificate of Recognition April 26 from Deputy Center Director Carolyn Griner. He received the certificate for inventing a parachute with improved vent line static. The parachute was developed for use on the solid rocket booster.

Marshall renews existing Computer Sciences Corp. contract

Marshall has exercised an option to continue an existing contract with Computer Sciences Corp. of Falls Church, Va., to provide information services to Marshall and to NASA agencywide.

The priced option, valued at $133,667,949, covers the period of May 1 through April 30, 2000. It continues efforts under a contract titled Program Information Systems Mission Services, which originally was awarded to Computer Sciences in 1994.

Work performed by Computer Sciences Corp. and its subcontractors under the Mission Services contract includes support for Marshall computer systems, applications software, telephone systems and audio-visual services.

It also includes a range of services for NASA agencywide, including support of information management systems and the NASA Automated Data Processing Consolidation Center.

The option is the fourth of six priced options, and brings the total value of the contract, to date, to $768,136,593.

The Mission Services contract will have an approximate total value, if all options are exercised, of $1.049 billion.

Video

Continued from page 1

the crime scene will appear as if the crime happened in daytime, giving law enforcement officers the capability to identify valuable clues for crime solving.

This NASA-developed technology has the potential to stabilize images so that criminals and other important clues can be identified, even in blurred images," said Dr. Arsev H. Eraslan — the chief scientist of both the NASA National Technology Transfer Center and the Office of Law Enforcement Technology and Commercialization located in Wheeling, W.Va.

Many advantages

The Marshall-developed video stabilization system has many advantages over other systems being studied because it does more than just remove noise or "snow" from videos. It eliminates several problems often found in poorly recorded video.

"It's like a video eraser," said Dr. David Hathaway, the technology's co-inventor at Marshall. "It removes defects due to image jitter, image rotation and image zoom in video sequences."

Hathaway, a Marshall solar physicist, has developed software to clarify video images of the Sun. His partner, Meyer, a Marshall atmospheric scientist, has refined image-processing techniques to analyze space launch video and to study meteorological images. When the FBI asked NASA to help improve the quality of the Olympic bombing video, the Marshall scientists volunteered their expertise.

"Our teamwork, with each of us coming from different disciplines, is what made the creation of this product possible," said Meyer.

Stabilizes camera motion

The resulting Video Image Stabilization and Registration software stabilizes camera motion in the horizontal and vertical as well as rotation and zoom effects; produces clearer images of moving objects; smoothes jagged edges; enhances still images; and reduces video noise or "snow." Once NASA's new software improves the video quality, it is possible to use existing software to sharpen and "de-blur" images, thus further enhancing video clarity.

Hathaway and Meyer have produced sample videos showing how a blurry, "busy" video can be cleared up to reveal a person in a crowd, or how a jittery video can be enhanced, allowing a license plate to be read.

"Once digital cameras become more affordable, it might even be practical to use the system inside video recorders to stabilize and enhance images as they are recorded," said Hathaway.

Using a video capture device with a computer, the software will improve home videos or merge real with animated images.

"This technology has the potential to become a part of many products — from those used by everyday Americans, to those used by sophisticated security and video production companies," said Hathaway.

NASA's Technology Transfer Office at Marshall is helping Hathaway and Meyer patent their invention. The office also is working to encourage companies to license the product and use it in commercial applications.

NASA's role

"Our role is to transfer NASA inventions and technologies to U.S. industries," said Sammy Nabors of Marshall's Technology Transfer Office. "This video stabilization technology is an example of how Americans' investments in NASA's space program are returned to Americans in the form of a new technology that will improve their lives."

The video improvement system invented by Marshall scientists is a good example of how NASA technology can be used to fight crime. For an upcoming study, the National Institute of Justice and NASA's Goddard Space Flight Center in Greenbelt, Md., have joined forces. They will explore how NASA's sophisticated spacecraft technology can be used remotely to identify everything from bodily fluids to gunpowder residue without disturbing crime scenes.

The writer, a contractor employed by ASRI, supports the Media Relations Office.

Stephenson says people are No. 1

Focused products, strong engineering are reorg goals

by Mike Wright

Sometimes well-intentioned leaders in industry and government seemingly call their staffs together, draw a few lines and boxes on a chart, and then call a news conference to announce a reorganization. But that's not a reorganization, says Art Stephenson, director of the Marshall Space Flight Center.

"At the Marshall Center, the reorganization is designed to maintain a strong cross-cutting engineering capability while strengthening our product lines," Stephenson said, referring to the reorganization that he announced Jan. 29. Keenly aware of the physical magnitude of the reorganization and its impact on employees, Stephenson also wants to make absolutely sure that employees understand the purpose behind it.

Restructuring Objectives

The reorganization establishes a Space Transportation Directorate, Science Directorate, and Flight Projects Directorate. The objective is to increase the focus on the Center's assigned roles and missions, Stephenson said. "We also want to align ourselves with the NASA enterprises, and improve our customer interfaces with industry, the Department of Defense and academia," he said.

Besides strengthening Marshall's product lines, the reorganization also establishes an Engineering Directorate. "We have a strong engineering capability within the Center and one of the things we wanted to do was make sure we maintain it," said Stephenson.

The reorganization will also strengthen the Center's research and technology capabilities. In addition, it will eliminate overlap and duplication, and streamline and energize the organization.

"By co-locating people, we will improve communications and thus improve the effectiveness of our programs and projects," Stephenson added. Also new is a Systems Management Office, responsible for developing and implementing standardized processes and tools for systems engineering and cost analysis.

Restructuring Philosophy

Stephenson also says it is important for employees to understand the philosophy behind the restructuring. "We need strong, focused 'product-line' organizations that are customer focused from womb to tomb," he said.

"As we perform well on today's programs, more opportunities will open up in the long term. We are in control of our future." The philosophy resulted in moving all product-line functions into dedicated organizations with responsibility for all aspects of programs and projects.

"I want to thank the organizational development teams whose members dedicated so much effort to defining and planning the new directorates. These teams had a major role in working out the details of the organizations in the Cross-Cutting team that (Center Deputy Director) Carolyn Griner headed," Stephenson said. "A lot of questions arose during the process and were effectively dealt with by these teams," he added.

As part of a Center Cross-Cut team effort, five process teams were formed to study such areas as export control, proposal development, dual career path, Center resource planning and the program and project management process," Stephenson said. "Of course, these aren't all of the areas that we expect to study. As we go through the process, we invite additional input from employees."

Values won't change

"I believe that values form the bedrock basis of how we do business at the Marshall Center," Stephenson said. "We spent over six months talking about values and making sure we had the right set." The list of values includes employees, customers, excellence, teamwork and innovation. "We also set goals," he said. "These may change as the environment we are working in changes. But the values won't change."

At the top of the list of values, Stephenson said, is people. "We value people because we care about them, and because it is a good way to do business. The philosophy is that customers are better treated when employees are enthusiastic and glad to come to work."

The Center d irector said valuing people means "management is going to operate more as a coach and less as a decision-maker." To make the point, Stephenson referred to the Marshall Fastrac engine team that recently won the NASA Administrator's Exemplary Continual Improvement Team Award. "That Fastrac engine was not managed in the traditional manner. We basically formed an integrated product development team. Those people were in control of their own decision-making process. That's what empowering employees can do."

Safety and Stress

In line with placing people at the top of the list of values, Stephenson says safety is the Center's No. 1 priority. "This is extremely important during the reorganization, when employees might be tempted, for example, to move heavy boxes themselves instead of relying on professional movers," he said.

Change also brings stress. "There is a lot of stress," he said. "This always happens when you ask people to move and to suddenly report to other people. There's a fear of the unknown."

Stephenson's own experience in private industry taught him that it is absolutely essential to communicate with employees when they face major changes. "The more we tell people about what we are doing, and why we are doing it, the better off we all are."

Stephenson says stress is a long-term factor. "We have fewer people. We have fewer dollars to do the work. That can raise stress if people are on overload. We must balance our professional and personal lives. Managers and supervisors can encourage employees to take care of themselves. But in the end, the employee is really responsible for his or her own health," Stephenson said.

*See **Reorganization** on page 5*

Reorganization

Continued from page 4

"Everyone should understand, however, that employees need relief from stress. One outlet includes relying on new tools to make us work more efficiently. Another is additional contractor support."

A Streamlined Organization

The Center director expressed his appreciation to the teams that have helped plan the reorganization and to the employees that are involved in it. "There's still a lot of work to be done. But I think every person involved in this transition is energized by the idea of having a more streamlined organization that is going to better address our needs at the Center."

The reorganization will also improve the way the Center does business with external organizations, Stephenson says. "As I go around NASA, and talk to industry leaders, these customers tell me that they appreciate the way we have focused our product lines so that they can better interface with us." He also believes that NASA Headquarters and the other NASA field Centers are changing how they view the Marshall Center. "We are very much supported by the Administrator as the Lead Center for Space Transportation for the agency, and as the Lead Center for Microgravity Research," he said.

Photo by Emmett Given

Center Director Art Stephenson discusses reorganization efforts at Marshall.

Referring to a recent newspaper article, Stephenson said, "I thought Mr. (Dan) Goldin (the NASA Administrator) made it pretty clear that he places a lot of confidence in Marshall to lower the cost of access to space."

Stephenson said other NASA Centers recognize that Marshall "has the responsibility to lead in space transportation. They are looking at what we are doing on X-33, X-34, X-37 and other projects." But he also acknowledged that both Marshall and other NASA Centers sometimes still view each other competitively in regard to major space flight projects. "I think it is time for us to partner and to work together and not be so parochial." Other Centers also view Marshall as a Center with a role to play in science, especially in microgravity, he added. "Of course, science is competitive. That's the way it's done — through peer review."

Contractors Are 'Partners'

A key element in the reorganization at Marshall involves making sure the contractors at the Center feel like "they are part of the team," Stephenson said. "I see them as partners. Sometimes, we can almost throw away the badges. This is a major shift in thinking. We had to put our thinking hats on differently. I just want to include the contractors in all that we are doing."

Referring to the trend of doing more with less, the Center Director noted that many Marshall contractors are also going through a reinvention process.

Stephenson says it is important to understand that Marshall does not have "first- and second-class citizens" when it comes to those who provide support services. "I want to be clear that as we downsize, we need the people who are traditionally called support just as much as we need those who are managing programs and doing the engineering on programs."

Future One of 'Stability'

As the reorganization moves forward, the Center director agrees that many employees are wondering about the future. He acknowledges the strain that NASA has felt after many years of self-assessment and introspection. "I think we will see more stability as we go forward. We will continue to reinvent ourselves within NASA but I think it will be less dramatic. We will spend less time contemplating who we are."

Celebrating Success

Asked how he thinks Marshall employees will view the results of the reorganization, Stephenson said, "I believe they will feel more in control of their destiny. I believe those who said they 'had to come to work' will say they 'look forward to coming to work.' Part of this is having fun," Stephenson said. He referred to Marshall's recent Great Moonbuggy Race, Annual Retirement Dinner and the one-year birthday celebrations by the Customer and Employee Relations Directorate and the Center Operations Directorate.

Stephenson said he encouraged team members who contributed to the success of the Fastrac Engine to plan a party. "They deserve it," he added.

The writer works in the Internal Relations and Communications Office.

Information technology security

If data loss occurs, there are recovery tactics

Information stored on personal computers is always at risk.

"Viruses, hard drive crashes and human error cause the majority of computer data losses," said Lee Lewis, president of Ontrack Data International, which specializes in data recovery services.

Although it's impossible to guarantee protection, there are preventive measures that can be taken. And if data loss does occur, there may be several ways to get it back.

• Place the workstation in a dry, cool, controlled environment that is dust- and static-free to protect the system and storage media from harmful jarring or bumping.

• Back up data often using reliable magnetic disks, tapes or other storage devices.

• Run a virus scan program regularly, and update it often.

• Perform periodic diagnostic checks on the hard drive.

• Be aware of strange workstation noises. If a strange noise or grinding sound is heard, save the file, turn off the computer immediately and call for assistance. Further operation may damage the workstation hard drive(s) beyond repair.

• Avoid using file recovery software if a workstation electrical or mechanical failure is suspected.

If unsure of the data loss situation or other problem, consult a desktop computer services provider by calling 544-HELP.

For more information, on these or any other information technology security questions, call Steve Jones, Marshall's Information Technology Security coordinator, at 544-4373.

Marshall awards two information technology contracts

by the Information Systems Services Office

The Center Operations Directorate successfully concluded two major — and simultaneous — information technology contract transitions May 1, with no interruption to customer service and no impact to ongoing operations.

"I am proud of all members of the Center Operations team involved in the transition, not just for surviving, but for cheerfully finding ways to ensure that our customers experienced no interruptions in service," said Sheila Cloud, director of the Center Operations Directorate. "The cooperative manner in which the three contractors have worked with each other and with the team has been outstanding."

For the past five years, Marshall and NASA customers have utilized a single source of integrated information technology support under the Computer Services Corp. Program Information Systems Mission Services (PriSMS) contract.

NASA's agencywide privatization initiatives, Consolidated Space Operations Contract (CSOC) and Outsourcing Desktop Initiative (ODIN) for NASA, now provide new contract sources for wide area network services, data reduction services and desktop support services.

Under the new contracts, those services have been outsourced and commercialized, resulting in significant changes to the way that information technology services are obtained for customers of the Information Systems Services Office.

CSOC is designed to consolidate space operations mission services, including wide area network management and operations and data reduction services, under a single outsourcing vendor. NASA awarded the contract to a team led by the Lockheed Martin Corp. on Sept. 25, 1998, and CSOC assumed operational responsibility from the PriSMS contract May 1.

The ODIN contract is designed to provide desktop computing and related information technology support functions with a privatized services contract, under which customers will buy desktop computing services on a "per-seat" basis, with gradual elimination of government ownership of desktop computing equipment and related assets.

On Oct. 30, 1998, the Office of Space Flight selected OAO Corp. as the ODIN contractor for Marshall, Kennedy Space Center in Cape Canaveral, Fla., Johnson Space Center in Houston and Stennis Space Center in Mississippi. OAO has already transitioned the other three centers to the contract, and they assumed operational responsibility for Marshall functions from PriSMS on May 1.

This contract transition was unique because, unlike more traditional transfers of support contract responsibilities, the incumbent PriSMS contractor will remain in place at Marshall to perform a wide variety of information technology support functions that do not fall under either ODIN or CSOC.

"Our new challenge is building a multi-contractor information technology support team that can continue to provide seamless service delivery to Information Systems Services Office's customers," Cloud said.

The concurrent transitions involved the transfer of resources from PriSMS to ODIN and CSOC, including thousands of government-owned hardware and software items, licenses, contracts, facilities and hundreds of skilled people.

"It would have been a significant accomplishment under the best of circumstances, but fate intervened to make sure that we raised the bar just a few more inches," Cloud said.

The Center reorganization and planning for the upcoming mass move, and preparation for the transition to full-cost accounting within NASA added an additional challenge to transition, Cloud said. "And just to make sure that no one got over-confident, it was necessary to schedule a major power outage for two key operational facilities that coincided with the very moment that the new contractors commenced operations."

TABES '99

Annual symposium May 18-19 addresses key technological issues

This year's Technical and Business Exhibition and Symposium (TABES) will be held May 18-19 at the Von Braun Center. It features focused discussions addressing key technological issues.

Topics to be discussed have major implications for both government and industry at the turn of the millennium.

The Space Symposium will include presentations by Marshall employees. The presenters will give insight into the Center's key mission roles in Space Transportation Systems Development, Microgravity Research and Space Optics Manufacturing Technology. In addition, Marshall's role in the development and operation of the International Space Station will be discussed.

Carolyn Griner, Center deputy director, will be the moderator for the Space Symposium.

A discussion of the X-34 and other launch vehicles will be May 18 from 2 to 4:30 p.m. A presentation from 2:15-2:45 p.m., titled "Our Nation's Future Space Transportation," will be given by Dennis E. Smith, the Planning and Operations manager of the Space Transportation Program at Marshall.

Joel Kearns, manager of Marshall's Microgravity Research Program, will discuss the Microgravity Development Laboratory and Space Station experiments May 18 from 2:45 to 3:15 p.m. The Microgravity Development Laboratory, dedicated to develop and support science experiments to be flown on the Space Shuttle and International Space Station, allows researchers to take their experiments from the design board, into orbit and back again.

From 3:15-3:45 p.m., James Bilbro, special assistant for optics at Marshall, will discuss Space Optics Manufacturing Technology. Scott Croomes, manager of the Station Life Support Project Office at Marshall, will talk about technological developments related to the Space Station from 3:45-4:15 p.m.

Other presentations include a simulation and modeling symposium devoted to current and future uses of these technologies that will be May 19 from 2:15 to 5 p.m.; another presentation May 19 from 9 to 11:15 a.m. examines the challenges privatization brings to both government and industry as each looks for better, more efficient ways of doing business; and military leaders will detail technology needs for the "Army After Next" at the Defense Symposium, May 18 from 9 to 11:30 a.m.

This year's TABES conference is expected to be the largest ever, with more than 7,000 attendees, including top professionals from government and commercial organizations. More than 250 booths will feature cutting-edge exhibits by government aerospace and defense agencies, high-tech corporations and academia.

For more information, call Jodi Weiner at (256)-837-4347 or e-mail jweiner@aol.com Information can also be found on the Web at: www.tabes.org

Job Opportunities

The following Recruiting Bulletins are open to outside applicants. Copies of the announcements can be found on the "Inside Marshall" Website.

Recruiting Bulletin: MSFC-HRO-99-16, Aerospace Technologist (AST) Engineering Positions, GS-7 through GS-12, various positions, multiple vacancies. Closes May 21.

Recruiting Bulletin: MSFC-EP-99-25, AST, Liquid Propulsion Systems, GS-861-13, Space Transportation Directorate, Marshall Center. Closes May 14.

Recruiting Bulletin: MSFC-EP-99-26, AST, Airbreathing Propulsion Systems, GS-861-13, Space Transportation Directorate, Marshall Center. Closes May 14.

Recruiting Bulletin: MSFC-EP-99-27, AST, Airbreathing Propulsion Systems, GS-861-13, Space Transportation Directorate, Marshall Center. Closes May 14.

Recruiting Bulletin: MSFC-EP-99-28, AST, Control Systems, GS-801-13, Space Transportation Directorate, Marshall Center. Closes May 14.

Recruiting Bulletin: MSFC-EP-99-29, AST, Aerospace Vehicle Design & Mission Analysis, GS-861-13, Space Transportation Directorate, Marshall Center. Closes May 14.

Recruiting Bulletin: MSFC-EH-99-30, AST, Experimental Manufacturing Techniques, GS-861-13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-31, AST, Aerospace Polymeric Materials, GS-893-13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-32, AST, Structural Materials, GS-806-12/13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-33, AST, Structural Materials, GS-806-13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-34, AST, Basic Properties of Materials, GS-1310-12/13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-35, AST, Aerospace Ceramic Materials, GS-892-13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EH-99-36, AST, Aerospace Metallic Materials, GS-806-13, Materials, Processes & Manufacturing Department, Engineering Directorate, Marshall Center. Closes May 17.

Recruiting Bulletin: MSFC-EP-99-37, AST, Fluid Mechanics, GS-861-13, Space Transportation Directorate, Marshall Center. Closes May 17.

Employee Ads

Miscellaneous

★ Lawn turf tractor, 11HP, 36" cut, $240. 859-9856
★ Crib, $50; changing table, $25; high chair, $25; toddler stroller, $10. 776-9165
★ Linux Red Hat 5.2, $20; Chessmaster 5000, $15; yo-yo strings, approx. 100, $10. 233-5247
★ Spaulding regulation size pool table, light oak finish, $650 obo; Powertel Nokia phone, $50. 430-4074
★ Hooked on Phonics, $50; girl's 20" bike, $30; Sega and games, $50. 772-4460
★ Meade Starfinder equatorial telescope, 8", 6x30mm viewfinder, equatorial mount, motor drive, 25mm eyepiece, $500. 881-3509
★ Panasonic car AM/FM CD player 4x22 watts RMS, wireless remote, $150; USAcoustics 5x50 watts RMS amplifier, $75. 971-9710
★ Solid oak china cabinet, three leaded glass doors on top, storage below, free delivery, $800. 859-9520
★ Motorcross boots, size 8, $60; Kevlar Motorcross helmet, full coverage (M), $60; Garmin GPS45XL, $110. 721-1495
★ Couch and matching loveseat, cream beige, cherry wood trim, good condition, $300. 859-0729
★ Fifth-wheel travel trailer, 21', 1991 Shadow Cruiser, fully equipped, $6,500, hitch available. 971-1207
★ Indy 500 tickets, two outside 3rd turn, $65 each, face value. 881-1249
★ Camper shell or short bed, full-size truck, white, $100. 852-3501
★ Compaq 386/20, no HD; Packard-Bell, 386SX/20, no video, 40MB; Microtek MSF-400G scanner; $60 for all. 776-0024
★ Dining room table, 6 chairs, hutch, credenza, $500; computer desk w/hutch, $25. 880-8134
★ Miscellaneous 1964 Chevy Impala parts, $50. 830-6584
★ Bass boat, 1984 Mercury, 50HP, 16', aluminum, power T&T, depth finder, $2,250. 880-2229
★ Pairs of Indy 500 tickets, pit road, face value, $75 each. 881-0533

Vehicles

★ 1968 Volkswagen Beetle, white, $2,250. 650-5375
★ 1996 Blazer LS, 4x4, black, 47K miles, loaded, 19mpg, must sell, $18,500. 461-7576
★ 1994 Ford Ranger XLT, Super-Cab, V6, 3.0L, auto, a/c, bed-liner, PB/PS, 38K miles, $11,000. 881-0551
★ 1996 Ford Ranger XLT, 20K miles, V6, red, air, bed-liner, factory warranty, $8,700. 880-9171
★ 1971 Porsche 911E, restored, Targa, mechanical fuel injection, new tires, emblems, seals, 5-speed, $9,500 obo. 650-5208
★ Citation, 4-door; 1981 Mustang, 2-door; both are 4-cylinder hatchbacks, $895 each, obo. 837-3844
★ 1994 Mercury Sable LS, fully equipped, 61K miles, $9,000 obo. 852-6225
★ 1992 Toyota Camry, LE, silver, fully equipped, one owner, high miles, $5,400. 922-5727
★ 1991 Honda Civic DX sedan, charcoal gray, 130K miles, automatic, AC, cassette, non-smoker, $5,000 obo. 830-0491
★ 1998 Dodge Durango, 17,700 miles, 4WD, third seat, power package, keyless entry, $27,800. 722-8221
★ 1997 Cadillac Deville, white, leather seats, 46K, still in warranty, $22,900. 232-1549
★ 1993 Geo Prizm, automatic, AC, radio/tape, cruise, 100K miles, well maintained, $4,500 obo. 881-5422
★ 1993 Toyota 4Runner, SR5-V6-4WD, 5-speed, 89K miles, AM/FM cassette, PW/PL/cruise, AC/rear heat, alloy wheels, $13,750. 722-0440
★ 1984 Toyota Corolla Deluxe, 4-door, 5-speed, sunroof, engine needs work, $900 obo. 247-3144
★ 1995 Honda Accord, LX-V6, silver, loaded, garage kept, new brakes, 40K miles, $14,950. 881-0476

Found

★ Prescription sunglasses at Bldg. 4628. 544-4331
★ Ring in lobby of Bldg. 4203. 881-2574
★ Money, in Bldg. 4200, call 544-4758 to identify.

Free

★ To good home, Australian Shepherd/Blue Healer mix, found on April 2 in Capshaw area. 771-2002

Center Announcements

☛ ***NASA Alumni League Meeting —*** NASA Alumni League will present the state-of-the-Center May 14 from 8:30 a.m.-noon, Bldg. 4200, 10th floor conference room. All NASA Alumni League members and retirees are welcome. For more information, call 881-9622.

☛ ***Fishing tournament results*** — Results of the Wheeler Lake tournament held April 24 are: first place — Ross Evans and Deon Smith with fish weighing 10.57 lbs.; second place — Charles Kilgore and John Pea with fish weighing 4.17 lbs.; and third place — Bill McPeak and Don McQueen with fish weighing 0.74 lbs. Big fish honors went to Ross Evans with a 2.72-lb. bass. The club encourages participation by NASA employees, family members and on-site contractors. A boat and experience are not required. For more information, call Charles Kilgore at 544-9437, Don McQueen at 544-9073 or Charlie Nola at 544-6367.

☛ ***Aerospace symposium —*** 33rd Aerospace Mechanisms Symposium, hosted by NASA and the Jet Propulsion Laboratory, will be held at the Pasadena Conference & Exhibition Center in Pasadena, Calif., May 19-21. The symposium is sponsored by Lockheed Martin Missiles & Space and the Aerospace Mechanisms Symposium Committee. For more information, call Carlton Foster at 544-7167, or visit the Website at: http://lmms.external.lmco.com/ams/index.html

☛ ***OSHA Hearing Conservation Training —*** Mandatory OSHA Hearing Conservation Training will be held May 11 and 18, in Bldg. 4200, Morris Auditorium. Three sessions will be offered each of the two days — at 7:30 a.m., 9:30 a.m. and 1 p.m. Marshall personnel, contractors and civil service working in areas which may expose them to excessive noise levels, who require the use of hearing protection and who receive a mandatory hearing exam at the Medical Center are designated as being on the Hearing Conservation Program and are required to attend. For more information, call Environmental Health at 544-2390.

☛ ***Ski Week Cookout*** — The 9th annual NASA Ski Week will be hosted at Big Sky, Mont., Jan. 22-29, 2000. All Marshall employees, retirees, on-site contractors and dependents are eligible to participate. There will be a ski week cookout May 14 from 5:30-8 p.m. at the Marshall picnic pavilion to discuss last season's trip, and provide information for the Big Sky trip. Donations for the cookout will be asked of those attending the cookout who did not go on last season's trip. For information, call 1-233-0705 or e-mail : thomas.s.dollman@msfc.nasa.gov

☛ ***Facilities Office Breakfast —*** Facilities Office employees, retirees and friends breakfast will be held at Shoney's at University Drive and Memorial Parkway May 11 at 8 a.m.

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